

## FORAGE WHEAT VARIETY TRIAL 2019

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The forage wheat trial was planted on 10 May 2019 in Fargo and harvested on 24 July in Fargo, ND. The experiment was a randomized complete block design with four replicates. Evaluations included dry matter forage yield, plant height at harvest, and forage quality including (crude protein, and nitrogen content) measured with the NIR XDS analyzer. Samples were sent to the Animal Science lab for wet chemistry analysis of remaining forage quality components. A complete forage analysis will be reported later.

The trial had a strong incidence of bacterial leaf blight (*Pseudomonas syringae* pv. *syringae*) as shown in the figure below (Table 1, Fig. 1). Dr. Andrew Friskop, NDSU Plant Pathology, identified the disease. Disease incidence was scored from 1-5, with 5 being the highest incidence. The defoliation to plants was serious, clearly reducing potential forage yield.

Forage yield was not significantly different among varieties fluctuating between 2.95 and 3.50 tons/acre (Table 2). Although forage yield was not significant among varieties, there was a clear linear negative relationship between forage yield and disease rating (Figure 2), with the lowest yield observed for WB-Patron and WB-9990 both with 5.0 and with 4.8 disease rating, respectively. There was also bird damage particularly severe in WB-Patron. The forage yield observed in this trial is higher of what is typically reported for annual cereal forages harvested at soft dough stage in this area (2.2-2.8 tons/acre) despite of the severe disease incidence. This indicate forage wheat has a very good forage yield potential.

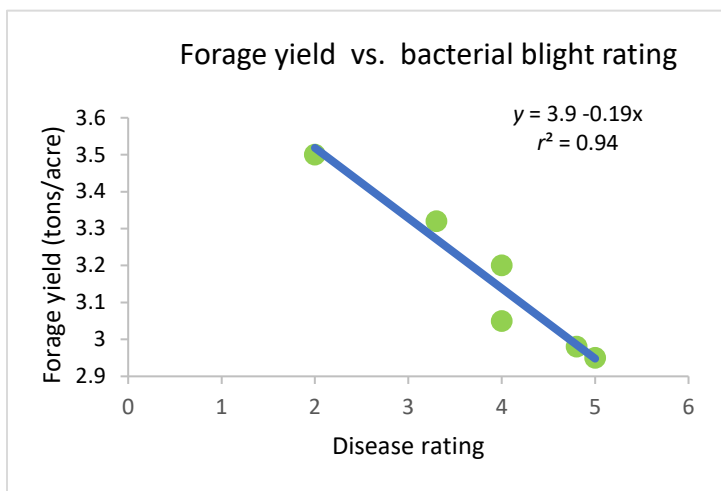


Figure 2. Forage yield and disease incidence in forage wheat varieties, in Fargo ND 2019.



Figure 1. Bacterial leaf blight in WB-Patron. Picture 23 July 2019.

**Table 1. Disease severity (bacterial leaf blight) of five forage-wheat varieties and forage-wheat and -pea mix at Fargo, ND seeded in 2019.**

Entry	Disease Rating <sup>†</sup>
WB-Patron	5.0
WB9490	4.0
WB9699	2.0
WB9590	3.3
WB9990	4.8
WB9590 + Forage pea	4.0
LSD (0.05)	0.7
CV, %	12.6

† Rating on a scale 1-5 where 5 is highest presence of disease.

Plant height was not significantly different among varieties fluctuating between 26.0 and 27.8 inches. Crude protein and nitrogen content were significantly higher for the forage wheat-pea mix as expected, although not significantly different from WB9490 and WB9699. Protein content for all varieties is above the requirement for a 1200 lbs beef cow with a calf ( about 9% CP) and within the range of crude protein for an annual cereal forage harvested at soft dough stage

**Table 2. Forage yield and harvest height of five forage-wheat varieties and forage wheat-pea mix at Fargo, ND seeded in 2019.**

Entry	Forage yield -----tons/acre-----	Plant height -----in-----
WB-Patron	2.95	26.0
WB9490	3.05	27.5
WB9699	3.50	26.8
WB9590	3.32	27.3
WB9990	2.98	27.0
WB9590 + Forage pea	3.20	27.8
LSD (0.05)	NS	NS
CV, %	3.37	3.4

**Table 3. Forage biomass crude protein (CP) and nitrogen (N) of five forage-wheat varieties and forage-wheat and -pea mix at Fargo, ND seeded in 2019.**

Entry	CP	N
	-----%-----	
WB-Patron	13.0	3.1
WB9490	13.9	3.2
WB9699	13.9	3.2
WB9590	13.2	3.1
WB9990	13.2	3.1
WB9590 + Forage pea	14.3	3.2
LSD (0.05)	0.6	NS
CV, %	3.0	2.3